## Attachment E – Notice of Intent

## WATER QUALITY ORDER NO. 2013-0002-DWQ
## GENERAL PERMIT NO. CAG990005

## STATEWIDE GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FOR RESIDUAL AQUATIC PESTICIDE DISCHARGES TO WATERS OF THE UNITED STATES FROM ALGAE AND AQUATIC WEED CONTROL APPLICATIONS

### I. NOTICE OF INTENT STATUS (see Instructions)

| |
|---|
| Mark only one item A. New Applicator B. Change of Information: WDID# 4 19AP00001<br>C. ☐ Change of ownership or responsibility: WDID# |

### II. DISCHARGER INFORMATION

| | | | |
|---|---|---|---|
| A. Name<br>Los Angeles Department of Water and Power | | | |
| B. Mailing Address<br>111 N Hope St., Room 1213 | | | |
| C. City<br>Los Angeles | D. County<br>Los Angeles | E. State<br>CA | F. Zip<br>90012 |
| G. Contact Person<br>Katherine Rubin | H. E-mail address<br>katherine.rubin@ladwp.com | I. Title<br>Manager of Wastewater Quality and Compliance | J. Phone<br>213-367-0436 |

### III. BILLING ADDRESS (Enter Information *only* if different from Section II above)

| | | | |
|---|---|---|---|
| A. Name | | | |
| B. Mailing Address | | | |
| C. City | D. County | E. State | F. Zip |
| G. E-mail address | H. Title | I. Phone | |

## IV. RECEIVING WATER INFORMATION

A. Algaecide and aquatic herbicides are used to treat (check all that apply):

1. ☒ Canals, ditches, or other constructed conveyance facilities owned and controlled by Discharger.
   Name of the conveyance system: Merrill Cut, North and South Halwee Reservoir, and other areas of the Los Angeles Aqueduct
2. ☐ Canals, ditches, or other constructed conveyance facilities owned and controlled by an entity other than the Discharger.
   Owner's name: _____
   Name of the conveyance system: _____
3. Directly to river, lake, creek, stream, bay, ocean, etc.
   Name of water body: _____

B. Regional Water Quality Control Board(s) where treatment areas are located
(REGION 1, 2, 3, 4, 5, 6, 7, 8, or 9): Region 6 - Lahontan
(List all regions where algaecide and aquatic herbicide application is proposed.)

## V. ALGAECIDE AND AQUATIC HERBICIDE APPLICATION INFORMATION

A. Target Organisms:
Aquatic vascular plants and algae including but not limited to potamogeton (pondweed) and bluegreen algae (cyanobacteria)

B. Algaecide and Aquatic Herbicide Used: List Name and Active Ingredients
Copper Sulfate Crystals: Copper (II) Sulfate Pentahydrate

C. Period of Application: Start Date Applications will be made on an as-needed basis during the year End Date Applications will be made on an as-needed basis during the year

D. Types of Adjuvants Used: Unknown

## VI. AQUATIC PESTICIDE APPLICATION PLAN

Has an Aquatic Pesticide Application Plan been prepared and is the applicator familiar with its contents?
☒ Yes ☐ No

If not, when will it be prepared? _____

## VII. NOTIFICATION

Have potentially affected public and governmental agencies been notified? ☒ Yes ☐ No

## VIII. FEE

Have you included payment of the filing fee (for first-time enrollees only) with this submittal?
☐ YES ☐ NO ☒ NA

**IX. CERTIFICATION**

"I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment. Additionally, I certify that the provisions of the General Permit, including developing and implementing a monitoring program, will be complied with."

A. Printed Name: Katherine Pyburn

B. Signature: Katherine Pyburn Date: 7/16/18

C. Title: Manager, Wastewater Quality & Compliance

**XI. FOR STATE WATER BOARD STAFF USE ONLY**

| | | |
|---|---|---|
| WDID: | Date NOI Received: | Date NOI Processed: |
| Case Handler's Initial: | Fee Amount Received: $ | Check #: |
| ☐ Lyris List Notification of Posting of APAP | Date _____ | Confirmation Sent _____ |

**Enclosure 3**

Revised Aquatic Pesticides Application Plan (APAP)

Los Angeles Department of Water and Power

# Aquatic Pesticides Application Plan (APAP)

Order No. 2013-0002-DWQ
NPDES No. CAG990005

Statewide General National Discharge Pollutant Discharge Elimination System (NPDES) Permit For Residual Aquatic Pesticide Discharges to Waters of the United States from Algae and Aquatic Weed Control Applications

August 6, 2018

Department of Water and Power
City of Los Angeles
Environmental Affairs
Wastewater Quality and Compliance Group
111 North Hope Street, Room 1213
Los Angeles, CA 90012

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## APPENDICES

## I. INTRODUCTION AND LOCATIONS

The Los Angeles Department of Water and Power (LADWP) has applied for a statewide general National Pollutant Discharge Elimination System (NPDES) Permit from the State Water Resources Control Board (SWRCB) to continue application of aquatic herbicides (glyphosate, imazapyr, and triclopyr based products) and algaecides (copper sulfate) to control weeds and invasive species at the LADWP facilities listed in Table 1.

**TABLE 1. LADWP Aquatic Weed Control Programs**

| Facility/Site | Region (RWQCB) | City/ County | Problem Biota | Associated Problems | Aquatic Herbicides (active ingredients) |
|---|---|---|---|---|---|
| Van Norman Complex | 4 | Granada Hills / Los Angeles | Invasive plant species (Arundo, Salt Cedar, Castor Bean, Tree Tobacco; other invasive species with potential to occur: perennial pepper-weed, fennel, eucalyptus, pampas grass, Brazilian peppertree, Mexican fan palm, Peruvian peppertree, stinkwort, tocalote, mustard) | To maintain debris basin functions(provide sediment collection and flood control) to the site and site structures; removal of invasive species; routine maintenance. | Glyphosate (Roundup or Roundup Custom) |
| Lower Franklin Reservoir Facility | 4 | Los Angeles / Los Angeles | Arundo, bulrush/cattails, castor bean, acacia, smartweed | Uncontrolled growth of weeds/invasive species could impede water flow; could result in standing water that attracts mosquitos. | Glyphosate (Roundup or Roundup Custom) |
| Barren Ridge Renewable Transmission Project (BRRTP) | 4 | Angeles National Forest / Los Angeles | Weeds, mustard species, flowering tocolote, reproductive parts of smilo grass, tree tobacco, blessed thistle, Eurasian watermilfoil | Required by Forest Service to aid in eradication of invasive, non-native plant species; for fire protection near planned transmission towers and switching station | Glyphosate (Roundup or Roundup Custom) and triclopyr (Garlon) |
| Castaic Creek | 4 | Castaic / Los Angeles | Weeds | Required for routine facility maintenance | Glyphosate (Roundup Custom) |
| Big Tujunga and Little Tujunga Canyons | 4 | Angeles National Forest / Los Angeles | Invasive weeds (Arundo donax) | Arundo donax impacts water resources through transpiration, ignition source for wildfires, leads to flood damage and reduced stream flow, causes high level of debris | Glyphosate (Aquamaster), imazapyr (Habitat), triclopyr (Renovate 3) |
| Alabama Gates | 6 | Lone Pine/Inyo County | Algae, pondweed | Uncontrolled growth of algae along the Los Angeles Aqueduct affects flows at the intake structures to Owens Lake | Copper-sulfate |

## II. PROJECT BACKGROUND

LADWP is the nation's largest municipal utility. It provides power and drinking water to approximately 4 million customers in the City of Los Angeles. LADWP owns and operates a complex water distribution system that includes the Los Angeles Aqueduct, reservoirs, canals, streams and the Owens River. The system of water conveyances begins in the north at Mono Lake and terminates at the Los Angeles Filtration Plant in Sylmar. After treatment in Sylmar, drinking water is distributed through a system of pipelines and reservoirs to the end users. LADWP owns and operates its own generation, transmission and distribution systems.

Need for Pesticides (Herbicide) Applications

LADWP applies aquatic herbicides for these purposes: 1) to remove vegetation (primarily invasive species) that can impair the ability of debris basins to collect sediment and/or provide flood control protection; 2) to eliminate impediments to stormwater flow, thus avoiding standing water that could serve as breeding grounds for mosquitoes and/or encourage unwanted vegetation growth; and 3) for the removal of weeds/vegetation including invasive species as part of routine facility maintenance and operational control; weeds/vegetation can attract burrowing rodents that can undermine slopes/structures and can also attract snakes. Note that aquatic herbicides are not applied to drinking water.

Following is detailed information about each LADWP facility where aquatic herbicides will or may be utilized.

### A. VAN NORMAN COMPLEX

#### 1. Site Description

The Van Norman Complex (VNC) is located within the Granada Hills area of Los Angeles. It includes a Lower Detention Basin and other facilities, as well as two debris basins. The Upper Debris Basin (UDB) is approximately three (3) acres in size, while the Middle Debris Basin is 15 acres in size. The basins provide sediment collection and flood control to the adjacent facilities. The low-flow channels of the basins must periodically be cleaned of sediment and vegetation to maintain their functions and hydraulic capacity.

Prior to 1994, both basins were approaching their capacity but were functioning properly. However, following the 1994 Northridge Earthquake, the UDB and MDB were subjected to large sediment loads which filled them beyond their capacities. Beginning in 1997, both debris basins were cleared of debris and vegetation and a new channel was created to channel storm water through the center of the basins. The project was completed in 2000.

Maintenance of the UDB and MDB is permitted under California Department of Fish and Game (CDFG) Streambed Alteration Agreement (SAA) # 1600-2004-0288-R5 2010-2022 (CDFG 2010) and California Regional Water Quality Control board (RWQCB) Water Quality Certification (WQC) No. 12-128 (RWQCB 2012). Both the SAA and the WQC require the removal from the basins of Arundo (Arundo donax), also referred to as giant reed, in addition to other invasive species

after each sediment removal activity. Vegetation/invasive species removal is not conducted on a regular schedule; the amount of rain and sediment accumulation dictates when removal will occur.

Stormwater from Weldon Creek enters the Complex at the north end of the UDB and passes southward into the MDB. Grapevine Creek and Bee Canyon ultimately drain into the MDB. After sand and gravel settles out of the stormwater in the UDB and MDB, the stormwater ultimately flows into Bull Creek via a concrete channel at the southern end of the MDB. Bull Creek ultimately discharges to concrete lined portions of the Los Angeles River.

**2. Treatment Area**

The treatment area consists of portions of the channel that direct storm water through the center of the basins. This runs roughly through the center of the north end of the facility, and along the southeastern portion of the facility. See map of treatment area in Appendix A, Figure 1. Red lines/shading indicate the treatment areas.

**3. Aquatic Weeds and Rationale**

Both the SAA and WQC require the removal from the basins, after each sediment removal activity, of Arundo, also referred to as giant reed, in addition to other invasive species (including but not limited to, salt cedar, castor bean, tree tobacco, all of which have been observed on site). LADWP consulted with a firm whose biologists surveyed the site to identify invasive species. The firm produced an "Arundo and Invasive Species Removal Plan (Plan)" for the VNC (See Attachment 1). The Plan describes treatment options for each invasive species: the preferred treatment method, timing of treatment, and the most effective aquatic herbicide/active ingredient. It also provided treatment options for invasive species with a high potential for occurring on site, including but not limited to: perennial pepperweed, fennel, eucalyptus, pampas grass, and Brazilian peppertree.

The Plan excludes species that are from northern California or are found in mountains or rangelands, as these are not likely to occur at the site.

**4. Aquatic Herbicides Applied and Method of Application**

*Aquatic Herbicide:* Roundup or Roundup Custom ("Roundup"), which contains glyphosate.

*Application Method:* The Roundup is stored in a stainless steel tank which is trailer-mounted or placed on a flat-bed and then transported to treatment areas. A hose from the tank is used to apply the pesticide; the tank remains secured on the trailer/flat-bed so that no spilling occurs. LADWP will apply pesticides only when there is a low chance of precipitation per the seven (7) day forecast and will endeavor to apply pesticides only the application/treatment areas are dry.

**5. Decision to Select Herbicides**

LADWP contracted with a consulting firm to produce an invasive species removal plan for the Van Norman complex. A team of biologists conducted a site survey to identify vegetation, whether native, non-native, and invasive. The team's report indicated that treatment options include a combination of manual removal and herbicide treatments. Mechanical removal was determined to be ineffective for the targeted vegetation because it does not remove the entire root systems and could even increase infestations of some species. An aquatic herbicide with glyphosate was identified as the most effective. Mechanical removal therefore can be used only

for areas that do not include the targeted species and where the terrain is sufficiently flat. Manual removal is primarily intended for minor infestations of new Arundo plants.

**6. Herbicide Dose and Determination**
Roundup is applied consistent with product labeling instructions for control of aquatic weeds.

**7. Gates and Control structures**
Not applicable.

**8. Exception period.**
Not applicable.

**9. Monitoring Plan**
See Appendix B.

**10. Procedures to Prevent Sample Contamination from Persons, Equipment, and Vehicles Associated with Algaecide and Aquatic Herbicide Application**
Water quality sampling is conducted by trained LADWP staff following established procedures designed to prevent contamination of samples. Procedures that prevent sample contamination include:

- ☐ Use clean sample bottles that are non-reactive. Glass and polyethylene bottles are used for water samples.
- ☐ Wear gloves that are powder-free vinyl to avoid the contamination associated with latex gloves.
- ☐ Samples are immediately placed in an ice chest away from contaminants as soon as the samples are taken.

**11. Best Management Practices Implemented**
*Application:* The herbicide is applied by LADWP personnel, contractor, or subcontractor who have either a Qualified Applicator Certificate or License issued by the State of California Department of Pesticide Regulation (Licensing Certification Program). These individuals are trained to ensure that algaecides and aquatic herbicides are applied at rates consistent with label requirements and in a manner that avoids potential adverse effects.

*Notification:* Not applicable.

*Treatment:* Correctly mixed aquatic herbicides are applied during daylight hours by certified personnel using properly-maintained and calibrated equipment capable of delivering desired volumes. Whenever feasible, localized applications are utilized (e.g., direct painting of herbicide on cut stumps), rather than foliar applications, to limit the possibility for drift and impacts to neighboring native species. However, for plants that are less than 4 feet tall, foliar application is less labor intensive and more effective. It is easier to minimize overspray or drift when treating smaller plants. Drift management requirements are also followed through techniques such as controlling droplet size, nozzle orientation, and avoiding spray applications when wind speed exceeds 10 miles per hour. The team of biologists specifically recommended cutting of Arundo to a height of 6 inches or less and "painting" the remaining stumps with the herbicide with a cloth-covered wand

or sponge, or by spraying with a hand mister. Manual removal is primarily intended for minor infestation of new Arundo plants. Because plant rhizome materials may remain, manual removal is generally not recommended.

*Spill Prevention and Cleanup:* The Roundup Custom is stored in a stainless steel tank which is trailer-mounted or placed on a flat-bed and then transported to treatment areas. A hose from the tank is used to apply the pesticide; the tank remains secured on the trailer/flatbed so that no spilling occurs. Spray nozzles are attached to the hose that runs from the tank. Spray nozzles cannot dispense the herbicide unless the nozzle is activated (squeezed/triggered) by treatment personnel. When crews utilize backpack-style tanks, hose and nozzle connections and all caps/lids are inspected for tight/complete connections and closure prior to use to prevent leaks and spills.

However, should a spill occur, staff will follow the field division's established emergency response procedures and refer to the material safety data sheet (MSDS) for instructions on containing and cleaning up the spill. Emergency response and MSDS procedures will be reviewed regularly. A copy of the emergency response procedures and material safety data sheets will be available during each treatment. Cleanup equipment will be kept in good working order and will be readily available at each application site.

*Water Quality Monitoring*: Should the application/treatment areas contain water at the time of application, water quality monitoring will follow in accordance with permit requirements; see Appendix B.

*Access:* The entire Van Norman Complex has locked access gates that prevent entry by other than authorized personnel. Public access is not allowed.

*Post-Treatment:* The efficacy of the treatment is evaluated at the conclusion of the growing season during which treatment took place, and again at the commencement of the new growing season.

**12. Possible Alternatives to Algaecides and Aquatic Herbicide Use**

a. Evaluation of Management Options

(1) No Action

Typically, a "no action" approach is utilized until a certain threshold is reached, whereby excessive weed and plant growth begin to block channels and prevent stormwater from exiting the site. When stormwater cannot leave the site, the debris basins and channel would become congested with vegetation and their ability to collect sediment and/or provide flood control protections would be impaired. A "no action" option is therefore not acceptable after the threshold has been reached.

(2) Prevention

*Nutrient Control.* For this site, the vegetation already exists and must be eradicated. It is hoped that the eradication program may prevent the regrowth of vegetation, but this cannot be determined until the beginning of the next new growth season.

(3) Mechanical or Physical Methods
Mechanical removal was determined to be ineffective for the targeted vegetation because it does not remove the entire root systems and could even increase infestations of some species. An aquatic herbicide with glyphosate was identified as the most effective. Mechanical removal therefore can be used only for areas that do not include the targeted species and where the terrain is sufficiently flat. It is also infeasible for the majority of the site due to the following: lack of access for heavy equipment, uneven terrain, areas that are too wet or rocky for equipment or too dangerous for personnel to carry the tools required for mechanical removal.

(4) Cultural Method
Methods such as controlled burning are not suitable for aquatic vegetation or this specific site.

(5) Biological Control Agents
Biological methods such as the introduction of ducks or other wildlife are not suitable for a drinking water facility, as there may be impacts to water quality from animal feces, increases in turbidity levels and nutrients, as well as impacts to other existing, desirable species.

(6) Algaecides and Aquatic Herbicides
*Aquatic Herbicide Treatment.* Glyphosate has been proven to be an environmentally safe herbicide that is effective at reducing targeted aquatic weeds without adverse effects on non-target species. If the Van Norman Complex were not treated, aquatic weeds would negatively impact the ability of the on-site debris basins to collect sediment and stormwater and prevent flooding.

b. Decision Matrix to Select the Most Appropriate Formulation
The decision matrix below evaluates the aquatic weed options identified for the Van Norman Complex (section a: "Evaluation of Management Options" above).

| Van Norman Complex | | | | | | |
|---|---|---|---|---|---|---|
| **Decision Making Criteria** | **No Action** | **Prevention** | **Mechanical or Physical** | **Cultural Methods** | **Biological Agents** | **Aquatic Herbicides** |
| Is the impact to the environmental low or easily mitigated? | Yes | Yes | Yes | Yes | Yes | Yes |
| Is the cost of this option reasonable? | N/A | No | No | No | No | Yes |
| Has (have) the method(s) been effectively implemented at this site? | No | No | Yes | No | No | Yes |
| Option(s) selected for Van Norman Complex | | | | | | X |

## B. LOWER FRANKLIN RESERVOIR FACILITY

### 1. Site Description

The Lower Franklin Reservoir Facility includes a surge tank, power house, chlorination station, and a stormwater channel. The 168-acre site is situated in a canyon in the Santa Monica Mountains National Recreation Area, adjacent to the City of Beverly Hills. This Facility has been in service since 1982.

Stormwater enters the facility from all directions, as the facility is lower than (below) all adjacent properties, but in general, the overall site slopes from north to the south and any stormwater in the stormwater channel roughly follows this same path.

The area below the reservoir has a low point that has formed a natural channel that runs generally north to south. Trees and shrubs were observed on the sides of the channel. Invasive species (Arundo and cattails) were observed in the bottom of the stormwater channel. The invasive species must be removed as they are impediments to the flow of stormwater through the channel and into a storm drain located at the southwest corner of the site. This storm drain eventually connects to the Ballona Creek.

There are concrete gutters at the toe of some site hillsides, adjacent to the roadway.

### 2. Treatment Area

The treatment area consists of the middle section of the natural channel. See map in Appendix A, Figure 2. Red lines indicate the treatment area.

### 3. Aquatic Weeds and Rationale

Vegetation must be removed so that stormwater can flow unimpeded through the site. The targeted vegetation includes invasive species such as Arundo and bulrush/cattails.

### 4. Aquatic Herbicides Applied and Method of Application

*Aquatic Herbicide:* Roundup or Roundup Custom ("Roundup") for Aquatic and Terrestrial Use. This product contains glyphosate.

*Application Method:* The Roundup is stored in tanks that are transported to the site via a pickup truck. The truck is also equipped with a mounted or spray rig. In the channel bottom, a backpack style tank with a nozzle is used by crew member who is certified to apply pesticides/herbicides. The flow and rate of the herbicide can be controlled via the nozzle. Along the roadway, herbicides can be applied from the truck-mounted rig. LADWP will apply pesticides only when there is a low chance of precipitation per the seven (7) day forecast, and will endeavor to apply pesticides only the application/treatment areas are dry.

### 5. Decision to Select Herbicides

Most of the treatment area is not accessible to mowers or trucks; mechanical treatment is also infeasible to due to the site characteristics (uneven areas, small drop-offs, soft soil).

**6. Herbicide Dose and Determination**
Roundup is applied consistent with product labeling instructions for control of aquatic weeds.

**7. Gates and Control structures**
Not applicable.

**8. Exception period.**
Not applicable.

**9. Monitoring Plan**
See Appendix B.

**10. Procedures to Prevent Sample Contamination from Persons, Equipment, and Vehicles Associated with Algaecide and Aquatic Herbicide Application**
Water quality sampling is conducted by trained LADWP staff following established procedures designed to prevent contamination of samples. Procedures that prevent sample contamination include:

- ☐ Use clean sample bottles that are non-reactive. Glass and polyethylene bottles are used for water samples.
- ☐ Wear gloves that are powder-free vinyl to avoid the contamination associated with latex gloves.
- ☐ Samples are immediately placed in an ice chest away from contaminants as soon as the samples are taken.

**11. Best Management Practices Implemented**
*Application:* The herbicide is applied by LADWP personnel, contractor, or subcontractor who have either a Qualified Applicator Certificate or License issued by the State of California Department of Pesticide Regulation (Licensing Certification Program). These individuals are trained to ensure that algaecides and aquatic herbicides are applied at rates consistent with label requirements and in a manner that avoids potential adverse effects.

*Notification:* Not applicable

*Treatment:* Correctly mixed aquatic herbicides are applied during daylight hours by certified personnel using properly-maintained and calibrated equipment capable of delivering desired volumes. Whenever feasible, use should be limited to localized applications (e.g., direct painting of herbicide on cut stumps), rather than foliar applications, to limit the possibility for drift and impacts to neighboring native species. However, for plants that are less than 4 feet tall, foliar application is less labor intensive and more effective. Additionally, it is easier to minimize overspray or drift when treating smaller plants. Drift management requirements are also followed, such as controlling droplet size, nozzle orientation, and avoiding spray applications when wind speed exceeds 10 miles per hour. Treatment may entail first cutting the Arundo to a height of 6 inches of less and the painting the remaining stumps with the herbicide. The stumps can be painted with a cloth-covered wand or sponge or spraying with a hand mister. Manual removal is primarily intended for minor infestation of new Arundo plants. But because plant rhizome materials may remain, manual removal is generally not recommended.

*Spill Prevention and Cleanup:* The Roundup Custom is stored in a stainless steel tank which is trailer-mounted or placed on a flat-bed and then transported to treatment areas. A hose from the tank is used to apply the pesticide; the tank remains secured on the trailer/flatbed so that no spilling occurs. Spray nozzles are attached to the hose that runs from the tank. Spray nozzles cannot dispense herbicide unless the nozzle is activated (squeezed/triggered) by treatment personnel. When crews utilize backpack-style tanks, hose and nozzle connections and all caps/lids are inspected for tight/complete connections and closure prior to use to prevent leaks and spills.

However, should a spill occur, staff will follow the field division's established emergency response procedures and refer to the material safety data sheet (MSDS) for instructions on containing and cleaning up the spill. Emergency response and MSDS procedures will be reviewed regularly. A copy of the emergency response procedures and material safety data sheets will be available during each treatment. Cleanup equipment will be kept in good working order and will be readily available at each application site.

*Water Quality Monitoring*: Should the application/treatment areas contain water at the time of application, water quality monitoring will follow in accordance with permit requirements; see Appendix B.

*Access:* The entire Lower Franklin Reservoir Facility has locked access gates that prevent entry by other than authorized personnel. Public access is not allowed.

*Post-Treatment:* The efficacy of the treatment is evaluated at the conclusion of the growing season.

**12. Possible Alternatives to Algaecides and Aquatic Herbicide Use**

a. Evaluation of Management Options

(1) No Action

Typically, a "no action" approach is utilized until a threshold is reached, whereby excessive weed and plant growth begin to impede the flow of stormwater; flooding could result. A "no action" option is therefore not acceptable after the threshold has been reached.

(2) Prevention

*Nutrient Control.* For this site, the vegetation already exists and must be eradicated. It is hoped that the eradication program may prevent the regrowth of vegetation, but this cannot be determined until the beginning of a new growth season.

(3) Mechanical or Physical Methods

Mechanical removal is physically infeasible due to the following: lack of access for heavy equipment, uneven terrain, areas that are too wet or rocky for equipment or too dangerous for personnel to carry the tools required for mechanical removal.

(4) Cultural Method

Methods such as controlled burning are not suitable for aquatic vegetation or this specific site.

(5) Biological Control Agents
Biological methods such as the introduction of ducks or other wildlife are not suitable for a drinking water facility, as there may be impacts to water quality from animal feces, increases in turbidity levels and nutrients, and impacts to other existing, desirable species.

(6) Algaecides and Aquatic Herbicides
*Aquatic Herbicide Treatment.* Glyphosate has been proven to be an environmentally safe herbicide that is effective at reducing targeted aquatic weeds without adverse effects on non-target species. If the Lower Franklin Reservoir Facility were not treated, aquatic weeds would impede the flow of stormwater through the site, which could lead to flooding.

b. Decision Matrix to Select the Most Appropriate Formulation
The decision matrix below evaluates the aquatic weed options identified for the Lower Franklin Reservoir Facility (section a: "Evaluation of Management Options" above).

| **Lower Franklin Reservoir Facility** | | | | | | |
|---|---|---|---|---|---|---|
| **Decision Making Criteria** | **No Action** | **Prevention** | **Mechanical or Physical** | **Cultural Methods** | **Biological Agents** | **Aquatic Herbicides** |
| Is the impact to the environmental low or easily mitigated? | Yes | Yes | Yes | Yes | Yes | Yes |
| Is the cost of this option reasonable? | N/A | No | No | No | No | Yes |
| Has (have) the method(s) been effectively implemented at this site? | No | No | Yes | No | No | Yes |
| Option(s) selected for Lower Franklin Reservoir Facility | | | | | | X |

## C. BARREN RIDGE RENEWABLE TRANSMISSION PROJECT (BRRTP)

### 1. Site Description

LADWP is undertaking the Barren Ridge Renewable Transmission Project (BRRTP) to carry renewable energy. This electricity project entails construction of transmission lines, towers to support new transmission lines, and a switching station. This document pertains to the portion of the project that lies within the Angeles National Forest (ANF), which is under the jurisdiction of the National Forest Service (NSF).

The site is roughly bounded by the 138 Highway to the north and the northeast, California State Route 14 to the east and southeast, and the Interstate 5 to the west. There are ephemeral streambeds in the site, but none adjacent to identified treatment areas.

Weed control is required at individual locations that fall within three areas: a) along the 13-mile route of the new Barren Ridge-Haskell Canyon transmission line; b) along the13 mile-long existing Barren Ridge-Rinaldi Transmission Line; and along the four mile-long new circuit that will be constructed between Haskell Canyon and the Castaic Power Plant. Construction will take place within designated utility corridors.

### 2. Treatment Area

Weed treatment is required per the BRRTP Final Environmental Impact Report/Final Environmental Impact Statement (FEIR/FEIS) (LADWP, Bureau of Land Management [BLM], and United States Forest Service [USFS] 2013), and U. S. Fish and Wildlife Service (USFWS) Biological Opinion (USFWS 2012). Treatment is intended to treat invasive plant populations that have a negative ecological impact and/or pose fire hazards.

Treatment will be limited to individual locations where transmission towers (for transmission lines) and a switching station will be constructed and where botanists have identified invasive weeds. See map in Appendix A, Figure 3.

### 3. Aquatic Weeds and Rationale

Weed treatment is required per the BRRTP Final Environmental Impact Report/Final Environmental Impact Statement (FEIR/FEIS) (LADWP, Bureau of Land Management [BLM], and United States Forest Service [USFS] 2013), and U. S. Fish and Wildlife Service (USFWS) Biological Opinion (USFWS 2012). Treatment is intended to treat invasive plant populations that have a negative ecological impact and/or pose fire hazards.

This is a remote area with rocky, uneven terrain, accessible via dirt fire roads. The Forest Service requires hand removal (pulling) and/or cutting of most weed species. After hand removal, the immediate removal site is spot-treated with an herbicide.

### 4. Aquatic Herbicides Applied and Method of Application

*Aquatic Herbicide:* Roundup or Roundup Custom ("Roundup"), which contains glyphosate, or Garlon, which contains triclopyr.

*Application Method:* The selected herbicide is stored in tanks that are transported to the site via a pickup truck. The truck is also equipped with a mounted or spray rig. The truck can be used for treatment sites in close proximity to fire roads. For treatment sites that are beyond the range of the truck, a backpack style tank with a nozzle will be used by crew member who is certified to apply pesticides/herbicides. The flow and rate of the herbicide can be controlled via the nozzle. LADWP will apply pesticides only when there is a low chance of precipitation per the seven (7) day forecast, and will endeavor to apply pesticides only the application/treatment areas are dry.

**5. Decision to Select Herbicides**
Treatment protocol is determined by the Forest Service, which mandates hand removal (pulling) and/or cutting of most weeds/invasive species, followed by spot treatment with an herbicide.

**6. Herbicide Dose and Determination**
Roundup or Garlon is applied consistent with product labeling instructions for control of aquatic weeds.

**7. Gates and Control structures**
Not applicable.

**8. Exception period.**
Not applicable.

**9. Monitoring Plan**
See Appendix B.

**10. Procedures to Prevent Sample Contamination from Persons, Equipment, and Vehicles Associated with Algaecide and Aquatic Herbicide Application**
Water quality sampling is conducted by trained LADWP staff following established procedures designed to prevent contamination of samples. Procedures that prevent sample contamination include:

- ☐ Use clean sample bottles that are non-reactive. Glass and polyethylene bottles are used for water samples.
- ☐ Wear gloves that are powder-free vinyl to avoid the contamination associated with latex gloves.
- ☐ Samples are immediately placed in an ice chest away from contaminants as soon as the samples are taken.

**11. Best Management Practices Implemented**

*Application:* The herbicide is applied by LADWP personnel, contractor, or subcontractor who have either a Qualified Applicator Certificate or License issued by the State of California Department of Pesticide Regulation (Licensing Certification Program). These individuals are trained to ensure that algaecides and aquatic herbicides are applied at rates consistent with label requirements and in a manner that avoids potential adverse effects.

*Notification:* The Forest Service has approved LADWP's Treatment Plan.

*Treatment:* Correctly mixed aquatic herbicides are applied – via spot treatment - during daylight hours by certified personnel using properly-maintained and calibrated equipment capable of delivering desired volumes. Drift management requirements are also followed, such as controlling droplet size, and nozzle orientation.

*Spill Prevention and Cleanup:* The Roundup or Garlon is stored in a stainless steel tank which is trailer-mounted or placed on a flat-bed and then transported to treatment areas. A hose from the tank is used to apply the pesticide; the tank remains secured on the trailer/flat-bed so that no spilling occurs. Nozzles are attached to the hose that runs from the tank. Nozzles cannot dispense herbicide unless the nozzle is activated (squeezed/triggered) by treatment personnel. When crews utilize backpack-style tanks, hose and nozzle connections and all caps/lids are inspected for tight/complete connections and closure prior to use to prevent leaks and spills.

However, should a spill occur, staff will follow the field division's established emergency response procedures and refer to the material safety data sheet/s (MSDS) for instructions on containing and cleaning up the spill. Emergency response and MSDS procedures will be reviewed regularly. A copy of the emergency response procedures and material safety data sheets will be available during each treatment. Cleanup equipment will be kept in good working order and will be readily available at each application site.

*Water Quality Monitoring*: Should the application/treatment areas contain water at the time of application, water quality monitoring will follow in accordance with permit requirements; see Appendix B.

*Access:* The fire roads leading to the treatment areas have multiple locked gates that preclude access by other than authorized personnel.

*Post-Treatment:* The efficacy of the treatment is evaluated at the conclusion of the growing season.

**12. Possible Alternatives to Algaecides and Aquatic Herbicide Use**

a. Evaluation of Management Options

(1) No Action

Typically, a "no action" approach is utilized. At this site, weed treatment is required by the Forest Service to address invasive plant species and to minimize fire hazards. Because of existing weed infestation, the "no action" option is therefore not feasible.

(2) Prevention

*Nutrient Control.* For this site, the vegetation already exists and must be eradicated. It is hoped that the eradication program may prevent the regrowth of vegetation, but this cannot be determined until the beginning of a new growth season.

(3) Mechanical or Physical Methods

Mechanical removal is infeasible due to Forest Service requirements.

(4) Cultural Method
Methods such as controlled burning are not allowed within the ANF.

(5) Biological Control Agents
Biological methods are not allowed within the ANF.

(6) Algaecides and Aquatic Herbicides
*Aquatic Herbicide Treatment.* Glyphosate and triclopyr have been proven to be environmentally safe herbicides that are effective at reducing targeted weeds/species without adverse effects on non-target species.

b. **Decision Matrix to Select the Most Appropriate Formulation**
The decision matrix below evaluates the aquatic weed options identified for the BRRTP (section a: "Evaluation of Management Options" above).

| **Barren Ridge Renewable Transmission Project** | | | | | | |
|---|---|---|---|---|---|---|
| **Decision Making Criteria** | **No Action** | **Prevention** | **Mechanical or Physical** | **Cultural Methods** | **Biological Agents** | **Aquatic Herbicides** |
| Is the impact to the environmental low or easily mitigated? | Yes | Yes | Yes | Yes | Yes | Yes |
| Is the cost of this option reasonable? | N/A | No | No | No | No | Yes |
| Has (have) the method(s) been effectively implemented at this site? | No | No | Yes | No | No | Yes |
| Option(s) selected for Van Norman Complex | | | | | | X |

## D. CASTAIC CREEK STORMWATER BYPASS CHANNEL/CHECK BASINS & EMERGENCY SPILLWAY

### 1. Site Description
The Castaic Creek Stormwater Bypass Channel is adjacent to the hydroelectric Castaic Power Plant in northern Los Angeles County, within the Los Padres National Forest. The Channel includes three debris basins, each with its own "check dams." In addition, also located at the Castaic Power Plant is an Emergency Spillway.

### 2. Treatment Area
Should it be necessary, the Emergency Spillway allows for the overflow of water from the Elderberry Forebay, immediately adjacent to the Power Plant, into Castaic Lake. An herbicide is occasionally applied, as spot treatment, as vegetation can undermine the Emergency Spillway and attract burrowing rodents. The debris basins provide sediment collection and flood control. Herbicides are applied as needed inside the basins and on their check dams to treat vegetation that could impede stormwater flow and impair flood prevention functions. See map of treatment areas in Appendix A, Figure 4.

### 3. Aquatic Weeds and Rationale
Mechanical and hand removal are employed when feasible but typically the amount of vegetation in the debris basin determines the need for treatment with herbicides. An aquatic herbicide with glyphosate is used to treat vegetation because of its proven effectiveness.

### 4. Aquatic Herbicides Applied and Method of Application
*Aquatic Herbicide:* Roundup or Roundup Custom ("Roundup"), which contains glyphosate.

*Application Method:* Roundup is stored in a stainless steel tank which is trailer-mounted or placed on a flat-bed truck and then transported to treatment areas. A hose from the tank is used to apply the pesticide; the tank remains secured on the trailer/flat-bed so that no spilling occurs. When the truck cannot be used due to steep embankments or distance from the trailer/flat-bed, crews will utilize backpack-style tanks. LADWP will apply pesticides only when there is a low chance of precipitation per the seven (7) day forecast, and will endeavor to apply pesticides only the application/treatment areas are dry.

### 5. Decision to Select Herbicides
Mechanical and hand removal are employed whenever feasible, but the steep Emergency Spillway embankment and a large amount of vegetation inside the debris basin often necessitate herbicide treatment. An aquatic herbicide with glyphosate was identified as the most effective eradication method.

### 6. Herbicide Dose and Determination
Roundup is applied consistent with product labeling instructions for control of aquatic weeds.

### 7. Gates and Control structures
Not applicable.

**8. Exception period.**
Not applicable.

**9. Monitoring Plan**
See Appendix B.

**10. Procedures to Prevent Sample Contamination from Persons, Equipment, and Vehicles Associated with Algaecide and Aquatic Herbicide Application**
Water quality sampling is conducted by trained LADWP staff following established procedures designed to prevent contamination of samples. Procedures that prevent sample contamination include:

- ☐ Use clean sample bottles that are non-reactive. Glass and polyethylene bottles are used for water samples.
- ☐ Wear gloves that are powder-free vinyl to avoid the contamination associated with latex gloves.
- ☐ Samples are immediately placed in an ice chest away from contaminants as soon as the samples are taken.

**11. Best Management Practices Implemented**
*Application:* The herbicide is applied by LADWP personnel, contractor, or subcontractor who have either a Qualified Applicator Certificate or License issued by the State of California Department of Pesticide Regulation (Licensing Certification Program). These individuals are trained to ensure that algaecides and aquatic herbicides are applied at rates consistent with label requirements and in a manner that avoids potential adverse effects.

*Notification:* Not applicable.

*Treatment:* Correctly mixed aquatic herbicides are applied during daylight hours by certified personnel using properly-maintained and calibrated equipment capable of delivering desired volumes. Whenever feasible, localized spot applications are utilized rather than foliar applications, to limit the possibility for drift and impacts to neighboring native species. Drift management requirements are also followed through techniques such as controlling droplet size, nozzle orientation, and avoiding spray applications when wind speed exceeds 10 miles per hour.

*Spill Prevention and Cleanup:* The Roundup is stored in a stainless steel tank which is trailer-mounted or placed on a flat-bed and then transported to treatment areas. A hose from the tank is used to apply the pesticide; the tank remains secured on the trailer/flat-bed so that no spilling occurs. Spray nozzles are attached to the hose that runs from the tank. Spray nozzles cannot dispense herbicide unless the nozzle is activated (squeezed/triggered) by treatment personnel. When crews utilize backpack-style tanks, hose and nozzle connections and all caps/lids are inspected for tight/complete connections and closure prior to use to prevent leaks and spills.

However, should a spill occur, staff will follow the field division's established emergency response procedures and refer to the material safety data sheet (MSDS) for instructions on containing and cleaning up the spill. Emergency response and MSDS procedures will be reviewed regularly. A copy of the emergency response procedures and material safety data

sheets will be available during each treatment. Cleanup equipment will be kept in good working order and will be readily available at each application site.

*Water Quality Monitoring*: Should the application/treatment areas contain water at the time of application, water quality monitoring will follow in accordance with permit requirements; see Appendix B.

*Access:* The entire Castaic site is fenced; the entryway has security personnel, and all gates into the site are locked.

*Post-Treatment:* The efficacy of the treatment is evaluated at the conclusion of the growing season during which treatment took place, and again at the commencement of the new growing season.

**12. Possible Alternatives to Algaecides and Aquatic Herbicide Use**

a. Evaluation of Management Options

(1) No Action

A "no action" is infeasible, as the Emergency Spillway embankments and debris basin must be kept free of weeds for general maintenance purposes, to ensure integrity and to maintain flood control protection.

(2) Prevention

*Nutrient Control.* For this site, the vegetation already exists and must be eradicated. It is hoped that the eradication program may prevent the regrowth of vegetation, but this cannot be determined until the beginning of the next new growth season.

(3) Mechanical or Physical Methods

Mechanical and hand removal are employed whenever feasible but steep embankments and the amount of vegetation inside the debris basin often necessitate the use of an herbicide. Use of an aquatic herbicide with glyphosate was identified as the most effective method.

(4) Cultural Method

Methods such as controlled burning are not suitable for this specific site.

(5) Biological Control Agents

Biological methods are not suitable for this site; ducks and other wildlife are already present and have no impact on weed growth.

(6) Algaecides and Aquatic Herbicides

*Aquatic Herbicide Treatment.* Glyphosate has been proven to be an environmentally safe herbicide that is effective at reducing targeted aquatic weeds without adverse effects on non-target species.

b. Decision Matrix to Select the Most Appropriate Formulation

The decision matrix below evaluates the aquatic weed options identified for Castaic (section a: "Evaluation of Management Options" above).

| Castaic Creek | | | | | | |
|---|---|---|---|---|---|---|
| **Decision Making Criteria** | **No Action** | **Prevention** | **Mechanical or Physical** | **Cultural Methods** | **Biological Agents** | **Aquatic Herbicides** |
| Is the impact to the environmental low or easily mitigated? | Yes | Yes | Yes | Yes | Yes | Yes |
| Is the cost of this option reasonable? | N/A | No | No | No | No | Yes |
| Has (have) the method(s) been effectively implemented at this site? | No | No | Yes | No | No | Yes |
| Option(s) selected for Castaic Creek | | | | | | X |

## E. BIG TUJUNGA AND LITTLE TUJUNGA CANYONS

### 1. Site Description

Big Tujunga and Little Tujunga canyons are located in the Big Tujunga and Little Tujunga Watersheds, which are the headwaters of the Los Angeles River Watershed that originate high up in the Angeles National Forest. In 2009, the Station Fire burned in the Angeles National Forest for two months and damaged approximately 252 square miles of the forest. The extensive devastation to the surrounding landscapes and allowed Arundo donax to overwhelm habitats and establish larger stands than before the fire.

### 2. Treatment Area

The treatment area consists of approximately 100 acres of the Big Tujunga and Little Tujunga canyons, and riparian corridors. See map of treatment area in Appendix A, Figure 5.

### 3. Aquatic Weeds and Rationale

The type of weed being treated is Arundo donax, which is an invasive weed with the greatest impact on water resources in the Los Angeles area. Arundo is a clonal plant that grows in dense stands reaching heights up to 29 feet. It transpires water at 5 times the rate of native vegetation and reduces native habitat. It also provides an ignition source for wildfires, modifies channel dimensions and geomorphology leading the flood damage and reduced stream flow, and leads to high level of debris.

The National Forest Foundation (NFF) is developing the Arundo Eradication Project, which will take 10 years and an estimated $6.6 million to complete, with a water replenishment value of $17.2 million over 20 years. The eradication of 100 acres of Arundo can provide 2,000 acre feet of water per year, which will help to preserve local supplies and restore our watersheds during the ongoing drought.

### 4. Aquatic Herbicides Applied and Method of Application

*Aquatic Herbicide:* Only aquatically labeled formulations of glyphosate, imazapyr, and triclopyr (e.g. Habitat, Aquamaster, Renovate 3) will be used. Surfactants may also be used at the time of treatment.

*Application Method:* The selected herbicide is stored in tanks that are transported to the site via a pickup truck. The truck is also equipped with a mounted or spray rig. The truck is also equipped with a mounted or spray rig. The truck can be used for treatment sites in close proximity to fire roads. A hose from the tank is used to apply the pesticide; the tank remains secured on the trailer/flat-bed so that no spilling occurs. For treatment sites that are beyond the range of the truck or on steep embankments, a backpack style tank with a nozzle will be used by crew member who is certified to apply pesticides/herbicides. The flow and rate of the herbicide can be controlled via the nozzle.

LADWP will apply pesticides only when there is a low chance of precipitation per the seven (7) day forecast, and will endeavor to apply pesticides only the application/treatment areas are dry.

**5. Decision to Select Herbicides**
Mechanical and hand removal were determined to be ineffective for targeted vegetation because it would spread the plants instead of killing them. Manual removal is primarily intended for minor infestations of new Arundo plants and this infestation is over 100 acres. Because the treatment area is so large and the goal of the Arundo Eradication Project is to completely remove all Arundo, aquatic herbicides are the most efficient and effective method.

**6. Herbicide Dose and Determination**
Aquatic herbicides will be applied consistent with product labeling instructions for control of aquatic weeds.

**7. Gates and Control structures**
Not applicable.

**8. Exception period.**
Not applicable.

**9. Monitoring Plan**
See Appendix B.

**10. Procedures to Prevent Sample Contamination from Persons, Equipment, and Vehicles Associated with Algaecide and Aquatic Herbicide Application**
Water quality sampling is conducted by trained LADWP staff following established procedures designed to prevent contamination of samples. Procedures that prevent sample contamination include:

- ☐ Use clean sample bottles that are non-reactive. Glass and polyethylene bottles are used for water samples.
- ☐ Wear gloves that are powder-free vinyl to avoid the contamination associated with latex gloves.
- ☐ Samples are immediately placed in an ice chest away from contaminants as soon as the samples are taken.

**11. Best Management Practices Implemented**
*Application:* The herbicide is applied by LADWP personnel, contractor, or subcontractor who have either a Qualified Applicator Certificate or License issued by the State of California Department of Pesticide Regulation (Licensing Certification Program). These individuals are trained to ensure that algaecides and aquatic herbicides are applied at rates consistent with label requirements and in a manner that avoids potential adverse effects.

*Notification:* The National Forest Foundation (NFF) has asked LADWP to partner with their efforts in implementing the Arundo Eradication Project, since some of the treatment areas in the Big Tujunga and Little Tujunga Canyons are located on LADWP property.

*Treatment:* Correctly mixed aquatic herbicides are applied during daylight hours by certified personnel using properly-maintained and calibrated equipment capable of delivering desired volumes. Whenever feasible, localized spot applications are utilized rather than foliar applications,

to limit the possibility for drift and impacts to neighboring native species. Drift management requirements are also followed through techniques such as controlling droplet size, nozzle orientation, and avoiding spray applications when wind speed exceeds 10 miles per hour.

*Spill Prevention and Cleanup:* The herbicide is stored in a stainless steel tank which is trailer-mounted or placed on a flat-bed and then transported to treatment areas. A hose from the tank is used to apply the pesticide; the tank remains secured on the trailer/flat-bed so that no spilling occurs. Spray nozzles are attached to the hose that runs from the tank. Spray nozzles cannot dispense herbicide unless the nozzle is activated (squeezed/triggered) by treatment personnel. When crews utilize backpack-style tanks, hose and nozzle connections and all caps/lids are inspected for tight/complete connections and closure prior to use to prevent leaks and spills.

However, should a spill occur, staff will follow the field division's established emergency response procedures and refer to the material safety data sheet (MSDS) for instructions on containing and cleaning up the spill. Emergency response and MSDS procedures will be reviewed regularly. A copy of the emergency response procedures and material safety data sheets will be available during each treatment. Cleanup equipment will be kept in good working order and will be readily available at each application site.

*Water Quality Monitoring*: Should the application/treatment areas contain water at the time of application, water quality monitoring will follow in accordance with permit requirements; see Appendix B.

*Access:* The roads leading to the treatment areas have locked gates that can only be accessed by authorized personnel.

*Post-Treatment:* The project will take an estimated 10 years to complete Arundo eradication. The efficacy of the treatment is evaluated at the conclusion of the growing season during which treatment took place, and again at the commencement of each new growing season.

**12. Possible Alternatives to Algaecides and Aquatic Herbicide Use**

a. Evaluation of Management Options

(1) No Action

A "no action" is infeasible, as the invasive Arundo donax will continue to overwhelm habitats and establish larger stands. The transpiration from the Arundo donax has been shown to remove vast quantities of water from ecosystems and thereby limit the amount of water for nature and for groundwater replenishment.

(2) Prevention

*Nutrient Control.* For this site, the vegetation already exists and must be eradicated. It is hoped that the eradication program may prevent the regrowth of vegetation, but this cannot be determined until the project is complete.

(3) Mechanical or Physical Methods

Mechanical and hand removal were determined to be ineffective for targeted vegetation because

it would spread the plants instead of killing them. Manual removal is primarily intended for only minor infestations of new Arundo plants.

(4) Cultural Method
Methods such as controlled burning are not allowed within the Angeles National Forest.

(5) Biological Control Agents
Biological methods are not allowed within the Angeles National Forest.

(6) Algaecides and Aquatic Herbicides
Glyphosate, imazapyr, and triclopyr have been proven to be environmentally safe herbicides that are effective at reducing targeted aquatic weeds without adverse effects on non-target species.

b. Decision Matrix to Select the Most Appropriate Formulation
The decision matrix below evaluates the aquatic weed options identified for Big Tujunga and Little Tujunga Canyons (section a: "Evaluation of Management Options" above).

| Big Tujunga and Little Tujunga Canyons | | | | | | |
|---|---|---|---|---|---|---|
| **Decision Making Criteria** | **No Action** | **Prevention** | **Mechanical or Physical** | **Cultural Methods** | **Biological Agents** | **Aquatic Herbicides** |
| Is the impact to the environmental low or easily mitigated? | Yes | Yes | Yes | Yes | Yes | Yes |
| Is the cost of this option reasonable? | N/A | No | No | No | No | Yes |
| Has (have) the method(s) been effectively implemented at this site? | No | No | No | No | No | Yes |
| Option(s) selected for Big Tujunga and Little Tujunga Canyons | | | | | | X |

## F. ALABAMA GATES

### 1. Site Description
The Alabama Gates is located on the Los Angeles Aqueduct approximately 5 miles north of Lone Pine, in the Owens Valley. The Los Angeles Aqueduct is owned and operated by LADWP, and delivers water from the Owens River to the city of Los Angeles. Downstream of the Alabama Gates are two spill gates that control flow into the Owens Lake as part of the Owens Lake Dust Mitigation Project.

### 2. Treatment Area
The treatment area is at the location of the Alabama Gates at the start of the concrete-lined portion of the Los Angeles Aqueduct. See Appendix A, Figure 6 for map of the treatment area.

### 3. Aquatic Weeds and Rationale
The treatment is for filamentous green algae Cladophora and the pond weed Potomageton, that has grown on the intake structures of the spillgates located downstream of the Alabama Gates. These spillgates control flow into Owens Lake, as required by the Owens Lake Dust Mitigation Project. LADWP must meet the demand to provide flows from the Los Angeles Aqueduct to Owens Lake. The growth of algae on the concrete lined portions of the Los Angeles Aqueduct and intake screens has significantly affected the ability of water to flow into the Owens Lake, and continued algae growth will prevent LADWP from meeting the demand requirements. The rate of growth without algaecide treatments overcomes the mechanical ability to keep the intakes clear.

### 4. Aquatic Herbicides Applied and Method of Application
*Aquatic Herbicide:* Copper sulfate algaecides have proven to be effective at reducing target algae in water bodies without adverse effects on non-target organisms.

*Application Method:* Copper sulfate treatment is either applied aerially by helicopter or directly to the water from a dry chemical feeder (hopper). If applied directly to the water, a hose is attached to the dry chemical feeder and lowered to near the surface of the water, and copper sulfate is released at desired flow rate.

### 5. Decision to Select Herbicides
Mechanical and hand removal were determined to be ineffective for targeted vegetation because the rate of growth overcomes the ability to mechanically remove the algae and weeds. Without algaecide treatment, flows to Owens Lake have to be stopped on a daily basis to allow for the mechanical removal of algae from the intake structures. In the past, removal had to be performed up to 3 times per night in order to maintain adequate flows to Owens Lake due to all the algae buildup. Copper sulfate algaecide is the most effective treatment method in reducing target algae.

### 6. Herbicide Dose and Determination
Amount of copper sulfate application will depend on the flow in the Los Angeles Aqueduct at the time of treatment. Application will be consistent with product labeling instructions for the control of algae.

**7. Gates and Control structures**
Valves will be closed to ensure that no water from the Los Angeles Aqueduct treated with copper sulfate will be introduced to the Owens Lake Dust Mitigation Project.

**8. Exception period.**
Not applicable.

**9. Monitoring Plan**
See Appendix B.

**10. Procedures to Prevent Sample Contamination from Persons, Equipment, and Vehicles Associated with Algaecide and Aquatic Herbicide Application**
Water quality sampling is conducted by trained LADWP staff following established procedures designed to prevent contamination of samples. Procedures that prevent sample contamination include:

- ☐ Use clean sample bottles that are non-reactive. Glass and polyethylene bottles are used for water samples.
- ☐ Wear gloves that are powder-free vinyl to avoid the contamination associated with latex gloves.
- ☐ Samples are immediately placed in an ice chest away from contaminants as soon as the samples are taken.

**11. Best Management Practices Implemented**
*Application:* The herbicide is applied by LADWP personnel, contractor, or subcontractor who have either a Qualified Applicator Certificate or License issued by the State of California Department of Pesticide Regulation (Licensing Certification Program). These individuals are trained to ensure that algaecides and aquatic herbicides are applied at rates consistent with label requirements and in a manner that avoids potential adverse effects.

*Notification:* Not applicable.

*Treatment:* Copper sulfate treatment is usually scheduled during daylight hours and may continue into night, if necessary. Treatment is performed by certified personnel using properly-maintained and calibrated equipment capable of delivering desired volumes. If treatment is applied from a boat, a hose is attached to the dry chemical feeder and lowered to near the surface of the water, which prevents possibility for drift. If treatment is applied aerially by helicopter, wind speeds must be low enough to allow treatment to be performed safely and accurately.

*Spill Prevention and Cleanup:* Copper sulfate treatment will be applied according to label instruction to prevent spills. However, should a spill occur, staff will follow the field division's established emergency response procedures and refer to the material safety data sheet (MSDS) for instructions on containing and cleaning up the spill. Emergency response and MSDS procedures will be reviewed regularly. A copy of the emergency response procedures and material safety data sheets will be available during each treatment. Cleanup equipment will be kept in good working order and will be readily available at each application site.

*Water Quality Monitoring*: Water quality monitoring will follow in accordance with permit requirements; see Appendix B.

*Access:* The roads leading to the treatment areas have locked gates that can only be accessed by authorized personnel.

*Post-Treatment:* The efficacy of the treatment is evaluated at the conclusion of the growing season.

**12. Possible Alternatives to Algaecides and Aquatic Herbicide Use**

a. Evaluation of Management Options

(1) No Action

A "no action" is infeasible, as the excessive algae growth on the intake structures at the spill gates will have a significant effect on the ability to provide flows to Owens Lake Dust Mitigation Project to meet regulatory compliance requirements.

(2) Prevention

*Nutrient Control.* For this site, the vegetation already exists and must be eradicated. It is hoped that the eradication program may prevent the regrowth of vegetation, but this cannot be determined until the project is complete.

(3) Mechanical or Physical Methods

Mechanical or physical removal was determined to be ineffective for the targeted vegetation because it only removes algae for a short period of time. Physical removal requires having to shut down all flows to Owens Lake on a daily basis in order to effectively brush the algae off of the intake screens. In the past, removal had to be performed up to 3 times per night in order to maintain adequate flows to Owens Lake due to all the algae buildup.

(4) Cultural Method

Methods such as controlled burning are not suitable for aquatic vegetation or this specific site.

(5) Biological Control Agents

Biological methods such as the introduction of ducks or other wildlife are not suitable as there may be impacts to water quality from animal feces, increases in turbidity levels and nutrients, and impacts to other existing, desirable species.

(6) Algaecides and Aquatic Herbicides

Copper sulfate algaecides have proven to be effective at reducing target algae in water bodies without adverse effects on non-target organisms.

b. Decision Matrix to Select the Most Appropriate Formulation

The decision matrix below evaluates the algae control options identified for the Alabama Gates (section a: "Evaluation of Management Options" above).

| Alabama Gates | | | | | | |
|---|---|---|---|---|---|---|
| **Decision Making Criteria** | **No Action** | **Prevention** | **Mechanical or Physical** | **Cultural Methods** | **Biological Agents** | **Aquatic Herbicides** |
| Is the impact to the environmental low or easily mitigated? | Yes | Yes | Yes | Yes | Yes | Yes |
| Is the cost of this option reasonable? | N/A | No | No | No | No | Yes |
| Has (have) the method(s) been effectively implemented at this site? | No | No | No | No | No | Yes |
| Option(s) selected for Alabama Gates | | | | | | X |

## G. MERRITT CUT, NORTH AND SOUTH HAIWEE RESERVOIRS, AND OTHER AREAS OF THE LOS ANGELES AQUEDUCT

### 1. Site Description

The Los Angeles Aqueduct is owned and operated by LADWP, and delivers water from the Owens River to the city of Los Angeles. The Alabama Gates is located on the Los Angeles Aqueduct approximately 5 miles north of Lone Pine, in the Owens Valley. Downstream of the Alabama Gates are two spill gates that control flow into the Owens Lake as part of the Owens Lake Dust Mitigation Project. North Haiwee Reservoir is located approximately 28 miles south of Lone Pine, and Merritt Cut is located between the North and South Haiwee Reservoirs.

### 2. Treatment Area

The treatment area is at the North or South Haiwee Reservoirs, at Merritt Cut located between the Haiwee Reservoirs, or any other possible adjacent areas along the Los Angeles Aqueduct requiring treatment. See Appendix A, Figure 7 for a map of the treatment area.

### 3. Aquatic Weeds and Rationale

The treatment is for aquatic vascular plants and algae growth, such as filamentous green algae Cladophora and the pond weed Potomageton, which has obstructed flows, impairing water supply.

LADWP must meet the demand to provide flows from the Los Angeles Aqueduct to Owens Lake, as required by the Owens Lake Dust Mitigation Project. The growth of algae on the concrete lined portions of the Los Angeles Aqueduct and intake screens has significantly affected the ability of water to flow into the Owens Lake, and continued algae growth will prevent LADWP from meeting the demand requirements. The rate of growth without algaecide treatments overcomes the mechanical ability to keep the intakes clear.

### 4. Aquatic Herbicides Applied and Method of Application

*Aquatic Herbicide:* Copper sulfate algaecides have proven to be effective at reducing target algae in water bodies without adverse effects on non-target organisms.

*Application Method:* Copper sulfate treatment is either applied aerially by helicopter or directly to the water from a dry chemical feeder (hopper). For treatment of the North or South Haiwee Reservoirs, the copper sulfate is applied aerially from an aircraft and discharged as close as possible to the surface of the water to prevent drift of the crystals. For treatment at Merritt Cut or other areas along the drinking water conveyance system, small granules of copper sulfate are applied directly into the treatment area.

### 5. Decision to Select Herbicides

Mechanical and hand removal were determined to be ineffective for targeted vegetation because the rate of growth overcomes the ability to mechanically remove the algae and weeds. Without algaecide treatment, flows to Owens Lake have to be stopped on a daily basis to allow for the mechanical removal of algae from the intake structures. In the past, removal had to be performed up to 3 times per night in order to maintain adequate flows to Owens Lake due to all the algae buildup. Copper sulfate algaecide is the most effective treatment method in reducing target algae.

**6. Herbicide Dose and Determination**
The amount of copper sulfate used in the treatment will be minimized. Dosage is determined based on manufacturer's recommendation and on the flow in the receiving water body at the time of treatment.

**7. Gates and Control structures**
Valves will be closed to ensure that no water from the Los Angeles Aqueduct treated with copper sulfate will be introduced to the Owens Lake Dust Mitigation Project.

**8. Exception period.**
Not applicable.

**9. Monitoring Plan**
See Appendix B.

**10. Procedures to Prevent Sample Contamination from Persons, Equipment, and Vehicles Associated with Algaecide and Aquatic Herbicide Application**
Water quality sampling is conducted by trained LADWP staff following established procedures designed to prevent contamination of samples. Procedures that prevent sample contamination include:

- ☐ Use clean sample bottles that are non-reactive. Glass and polyethylene bottles are used for water samples.
- ☐ Wear gloves that are powder-free vinyl to avoid the contamination associated with latex gloves.
- ☐ Samples are immediately placed in an ice chest away from contaminants as soon as the samples are taken.

**11. Best Management Practices Implemented**
*Application:* The herbicide is applied by LADWP personnel, contractor, or subcontractor who has either a Qualified Applicator Certificate or License issued by the State of California Department of Pesticide Regulation (Licensing Certification Program). These individuals are trained to ensure that algaecides and aquatic herbicides are applied at rates consistent with label requirements and in a manner that avoids potential adverse effects.

*Notification:* Not applicable.

*Treatment:* Copper sulfate treatment is usually scheduled during daylight hours and may continue into night, if necessary. Treatment is performed by certified personnel using properly-maintained and calibrated equipment capable of delivering desired volumes. If treatment is applied from a boat, a hose is attached to the dry chemical feeder and lowered to near the surface of the water, which prevents possibility for drift. If treatment is applied aerially by helicopter, wind speeds must be low enough to allow treatment to be performed safely and accurately.

*Spill Prevention and Cleanup:* Copper sulfate treatment will be applied according to label instruction to prevent spills. However, should a spill occur, staff will follow the field division's

established emergency response procedures and refer to the material safety data sheet (MSDS) for instructions on containing and cleaning up the spill. Emergency response and MSDS procedures will be reviewed regularly. A copy of the emergency response procedures and material safety data sheets will be available during each treatment. Cleanup equipment will be kept in good working order and will be readily available at each application site.

*Water Quality Monitoring*: Water quality monitoring will follow in accordance with permit requirements; see Appendix B.

*Access:* The roads leading to the treatment areas have locked gates that can only be accessed by authorized personnel.

*Post-Treatment:* The efficacy of the treatment is evaluated at the conclusion of the growing season.

**12. Possible Alternatives to Algaecides and Aquatic Herbicide Use**

a. Evaluation of Management Options

(1) No Action

A "no action" is infeasible, as the excessive algae growth in the drinking water conveyance system will have a significant effect on the ability to provide flows for electrical grid reliability or to meet drinking water compliance requirements.

(2) Prevention

*Nutrient Control.* For this site, the vegetation already exists and must be eradicated. It is hoped that the eradication program may prevent the regrowth of vegetation, but this cannot be determined until the project is complete.

(3) Mechanical or Physical Methods

Mechanical or physical removal was determined to be ineffective for the targeted vegetation because it only removes algae for a short period of time. Physical removal requires having to shut down all flows on a daily basis in order to effectively brush the algae off of the intake screens. In the past, removal had to be performed up to 3 times per night in order to maintain adequate flows due to all the algae buildup.

(4) Cultural Method

Methods such as controlled burning are not suitable for aquatic vegetation or this specific site.

(5) Biological Control Agents

Biological methods such as the introduction of ducks or other wildlife are not suitable as there may be impacts to water quality from animal feces, increases in turbidity levels and nutrients, and impacts to other existing, desirable species.

(6) Algaecides and Aquatic Herbicides

Copper sulfate algaecides have proven to be effective at reducing target algae in water bodies without adverse effects on non-target organisms.

b. Decision Matrix to Select the Most Appropriate Formulation

The decision matrix below evaluates the algae control options identified for the Alabama Gates (section a: "Evaluation of Management Options" above).

| Merritt Cut, North and South Haiwee Reservoirs, and other areas along the Los Angeles Aqueduct | | | | | | |
|---|---|---|---|---|---|---|
| **Decision Making Criteria** | **No Action** | **Prevention** | **Mechanical or Physical** | **Cultural Methods** | **Biological Agents** | **Aquatic Herbicides** |
| Is the impact to the environmental low or easily mitigated? | Yes | Yes | Yes | Yes | Yes | Yes |
| Is the cost of this option reasonable? | N/A | No | No | No | No | Yes |
| Has (have) the method(s) been effectively implemented at this site? | No | No | No | No | No | Yes |
| Option(s) selected | | | | | | X |

# APPENDIX A

Site Maps of Treatment Areas

**Figure 1**

Van Norman Complex
Treatment Area

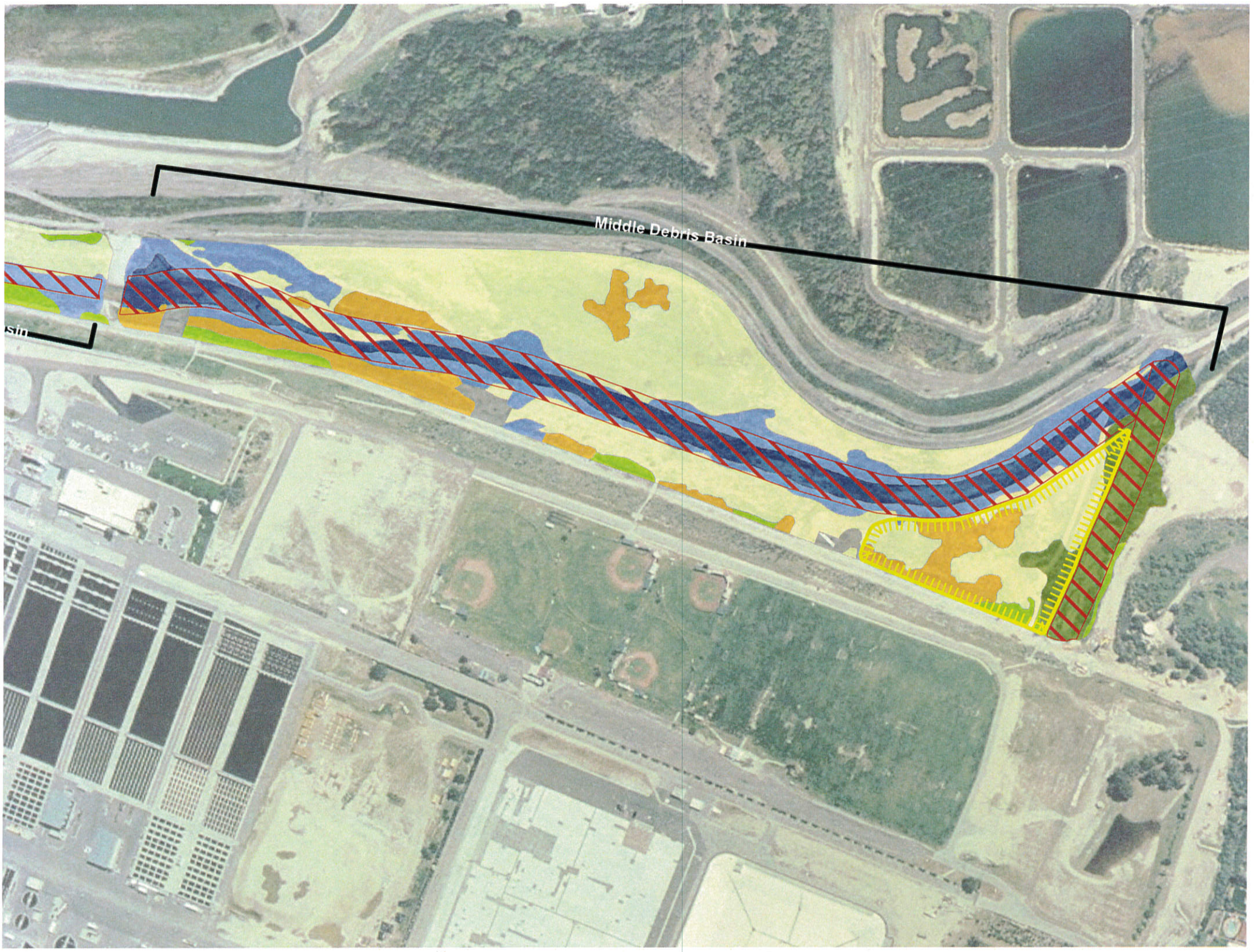

Middle Debris Basin

**Figure 2**

Lower Franklin Reservoir Facility
Treatment Area

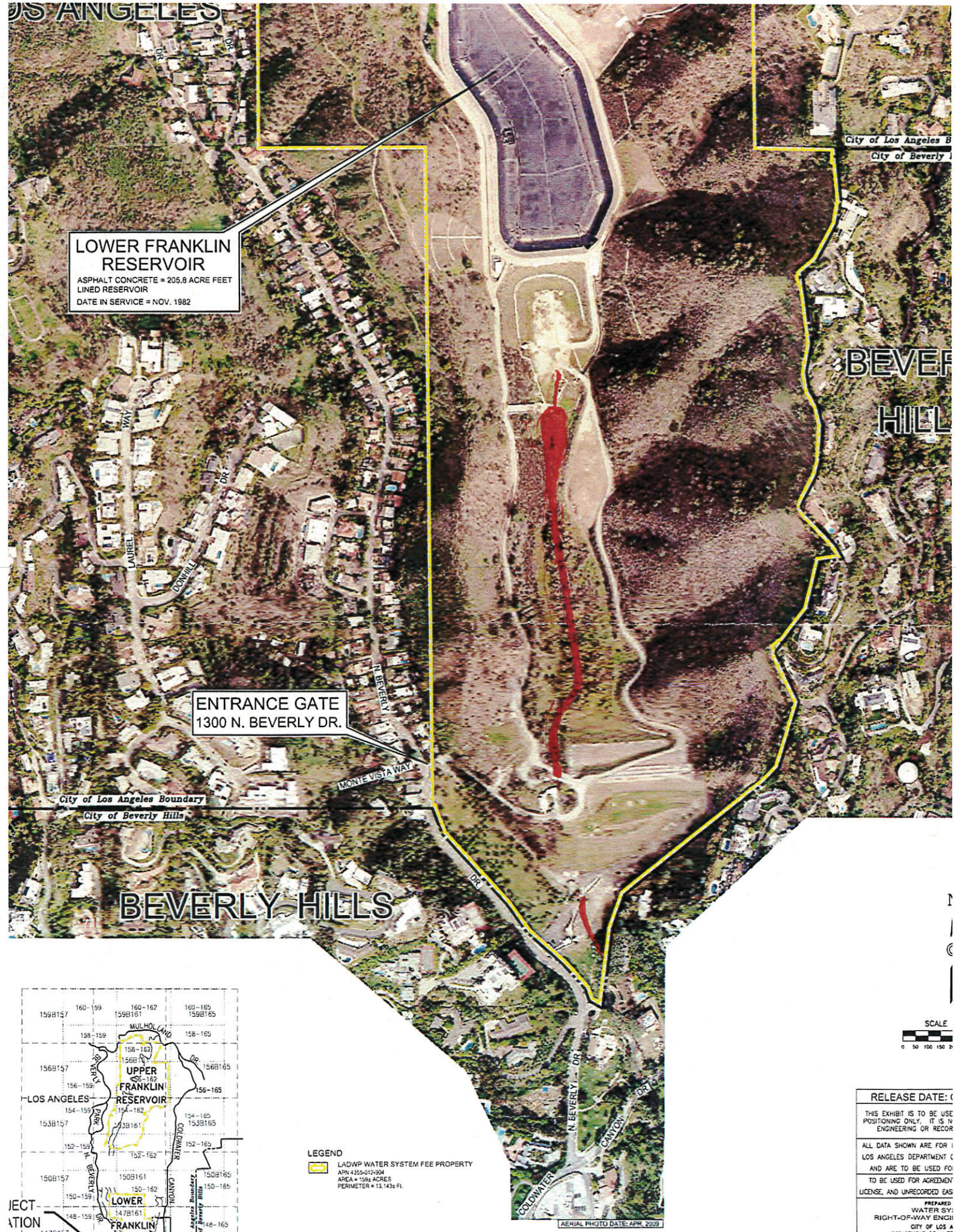

LOWER FRANKLIN RESERVOIR
ASPHALT CONCRETE = 205.8 ACRE FEET
LINED RESERVOIR
DATE IN SERVICE = NOV. 1982
ENTRANCE GATE
1300 N. BEVERLY DR.
City of Los Angeles Boundary
City of Beverly Hills
BEVERLY HILLS
MONTE VISTA WAY
N. BEVERLY DR.
LAUREL WAY
DONHILL DR.
COLDWATER CANYON DR.
City of Los Angeles B
City of Beverly
BEVER
HILL
UPPER FRANKLIN RESERVOIR
LOWER FRANKLIN RESERVOIR
LOS ANGELES
MULHOLLAND DR.
PARK LA BREA
COLDWATER CANYON
LEGEND
LADWP WATER SYSTEM FEE PROPERTY
APN 4355-012-904
AREA = 159± ACRES
PERIMETER = 13,143± FT.
AERIAL PHOTO DATE: APR. 2009
SCALE
0 50 100 150
RELEASE DATE:
THIS EXHIBIT IS TO BE USE
POSITIONING ONLY. IT IS N
ENGINEERING OR RECOR
ALL DATA SHOWN ARE FOR
LOS ANGELES DEPARTMENT
AND ARE TO BE USED FO
TO BE USED FOR AGREEMEN
LICENSE, AND UNRECORDED EAS
PREPARED
WATER SY
RIGHT-OF-WAY ENGI
CITY OF LOS A
DEPARTMENT OF WATE

**Figure 3**

Barren Ridge Renewable Transmission Project
Treatment Area

**FIGURE 1 BRRTP COMPONENTS AND ACTION AREA**

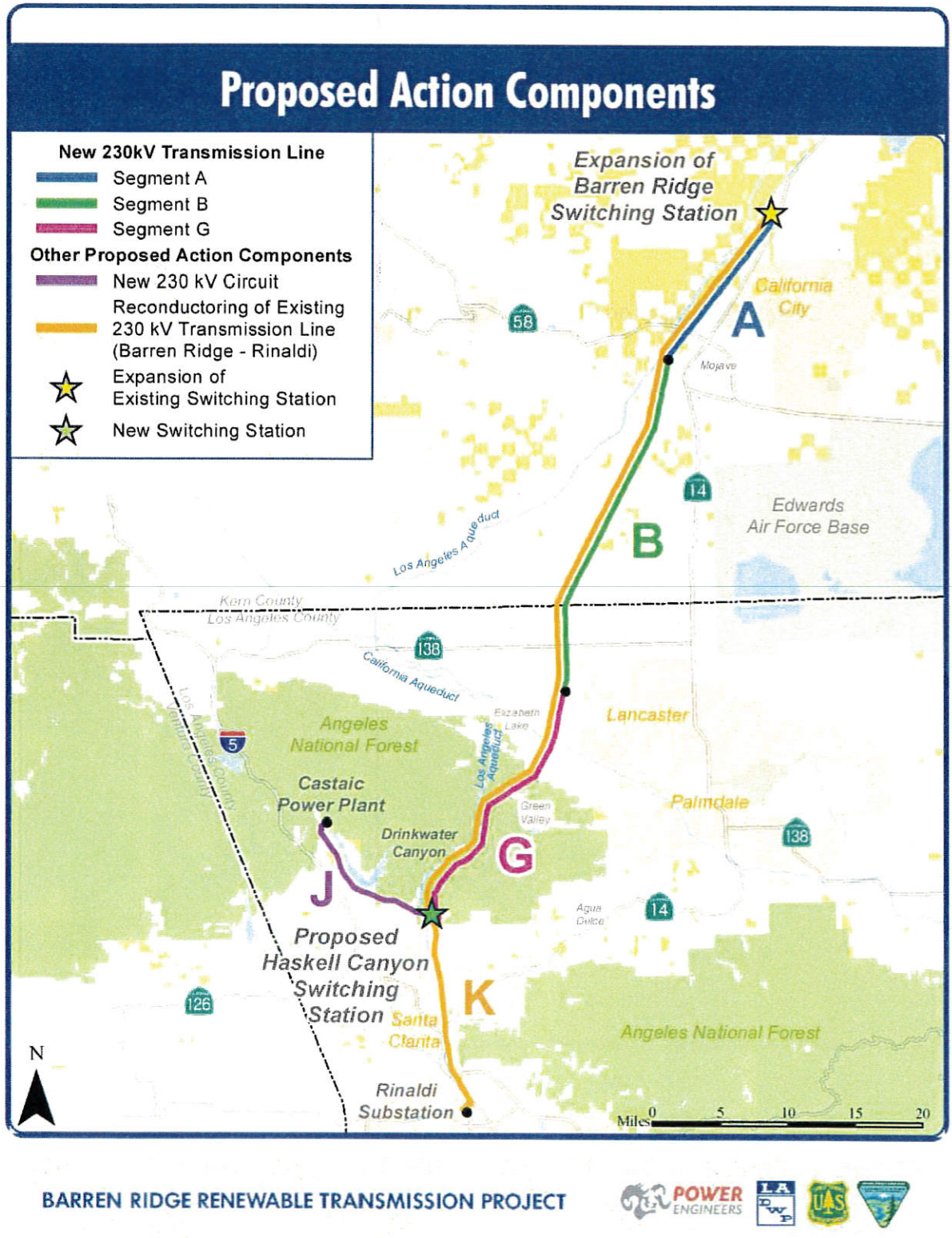


**Figure 4**

Castaic Creek Stormwater Bypass Channel & Emergency Spillway
Treatment Areas


Check Dam 3
Basin 3
Basin 2
Basin 1
Elderberry Forebay
Tailrace Channel
Castaic Creek
Check Dam 1
Check Dam 2
Castaic Power Plant
2346 ft
2002
Google earth
Imagery Date: 12/10/2013 lat 34.588876° lon -118.657426° elev 1572 ft eye alt 12496 ft

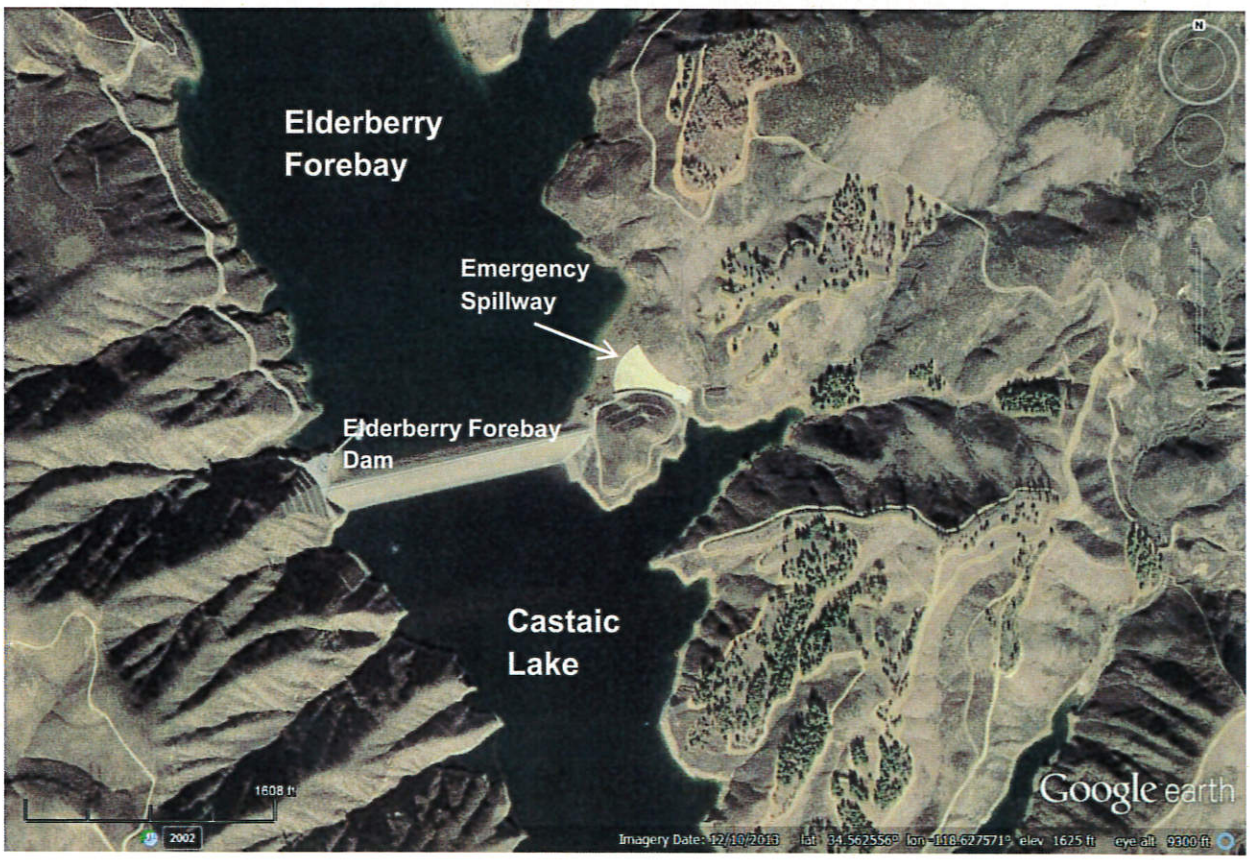

Elderberry Forebay
Emergency Spillway
Elderberry Forebay Dam
Castaic Lake
1608 ft
2002
Google earth
Imagery Date: 12/10/2013 lat 34.562556° lon -118.627571° elev 1625 ft eye alt 9300 ft

**Figure 5**

Big Tujunga and Little Tujunga Canyons
Treatment Area

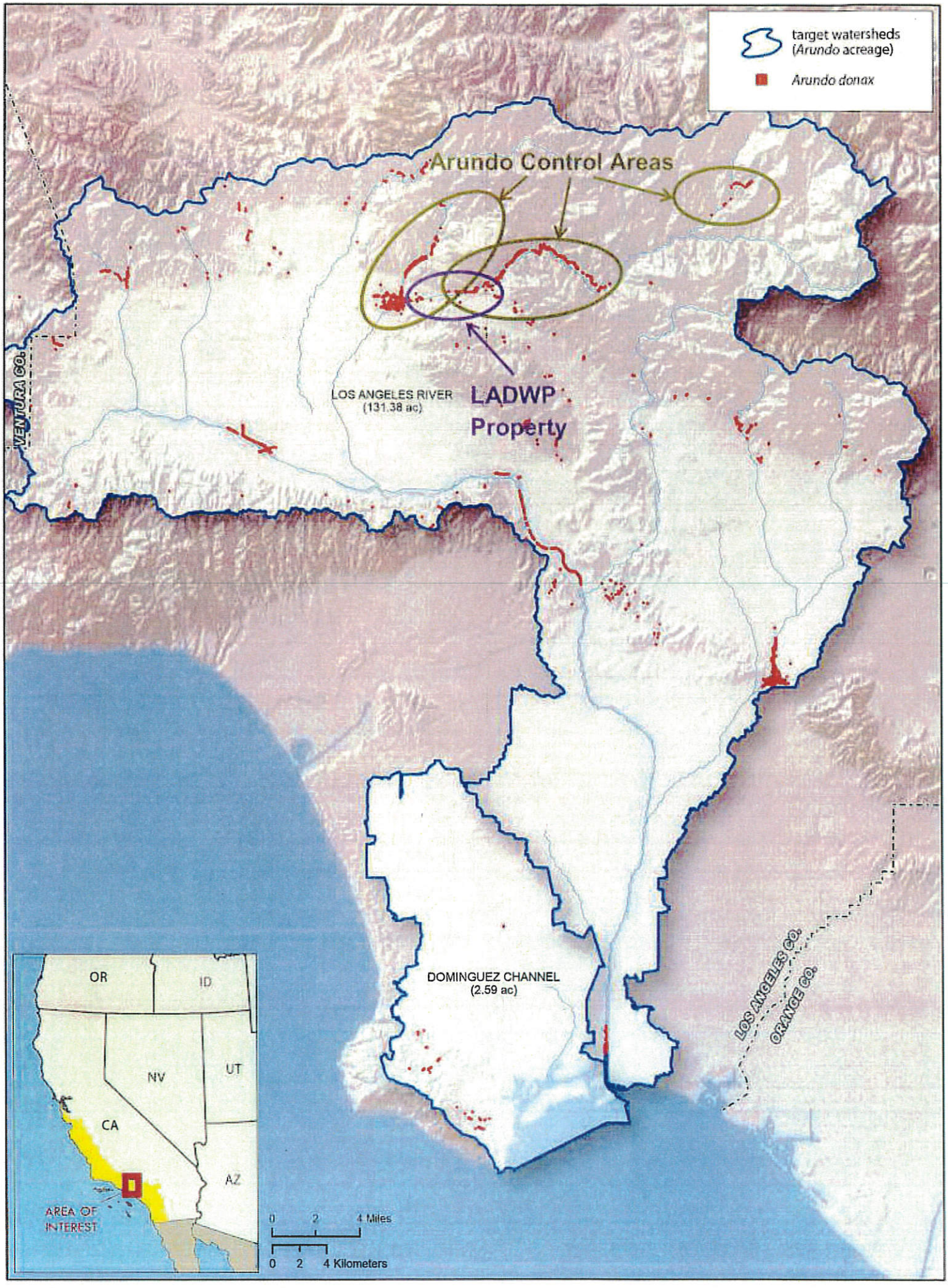

target watersheds
(Arundo acreage)
Arundo donax
Arundo Control Areas
LOS ANGELES RIVER
(131.38 ac)
LADWP
Property
VENTURA CO.
DOMINGUEZ CHANNEL
(2.59 ac)
LOS ANGELES CO.
ORANGE CO.
OR
ID
NV
UT
CA
AZ
AREA OF
INTEREST
0 2 4 Miles
0 2 4 Kilometers

**Figure 6**

Alabama Gates
Treatment Area

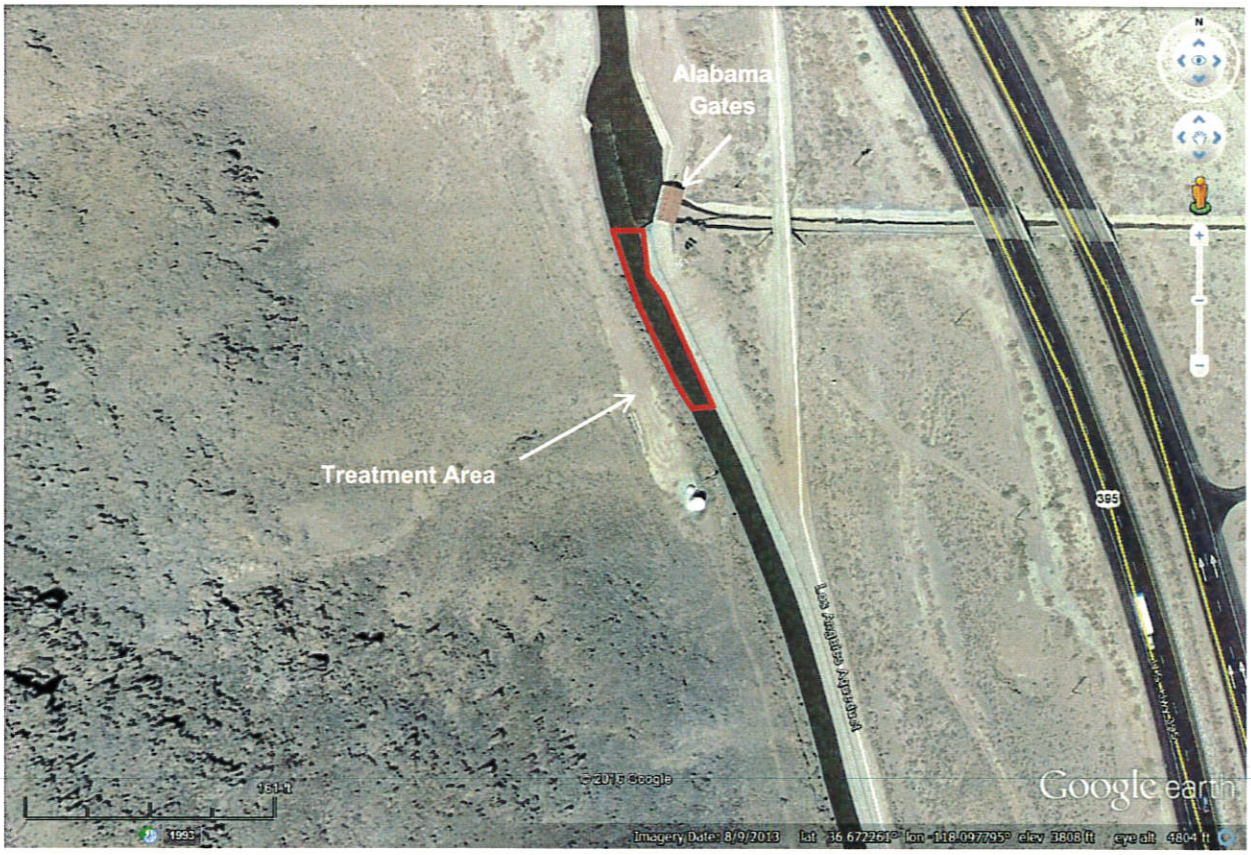
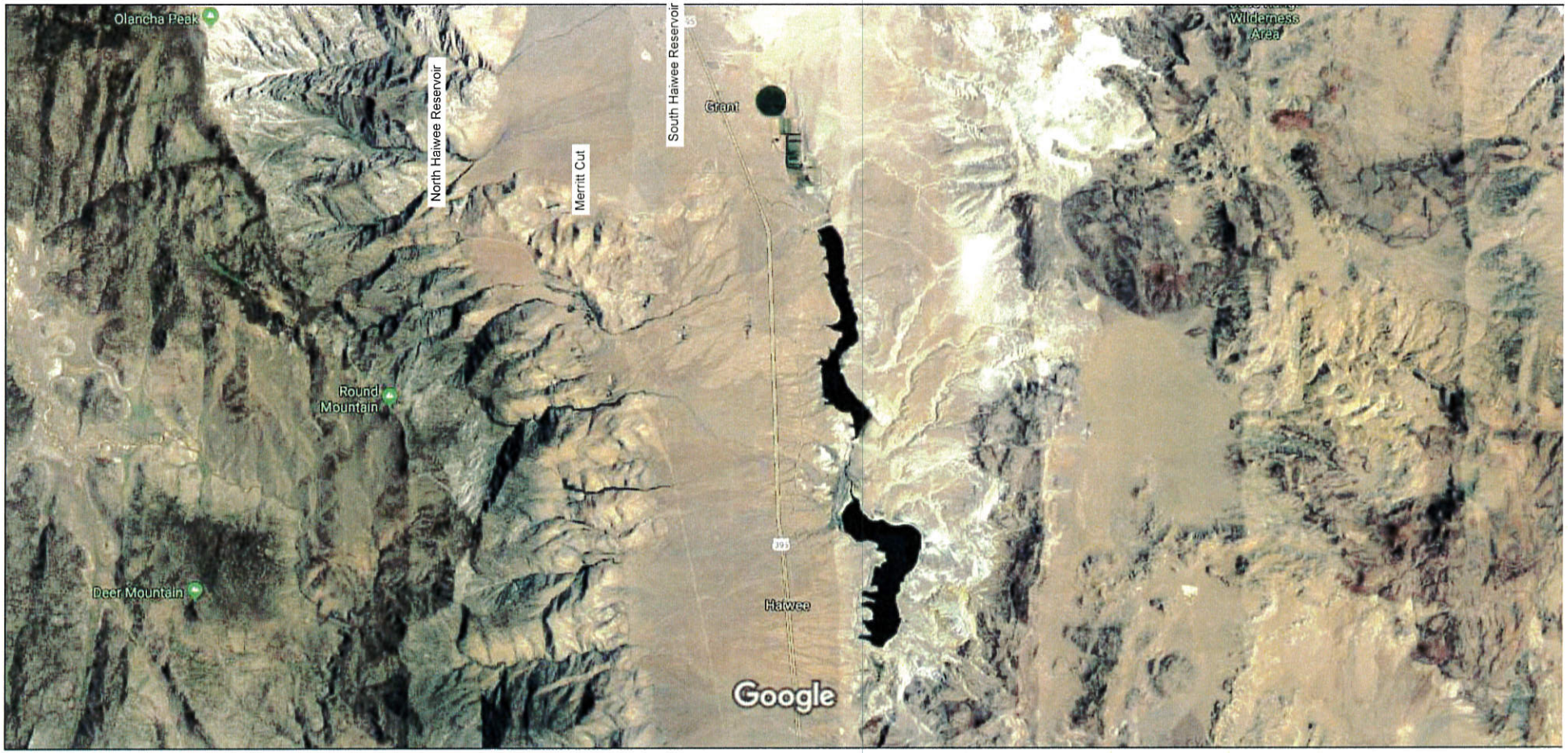



**Figure 6.** Treatment Area

**Figure 7**

Merritt Cut, North and South Haiwee Reservoirs,
and Other Areas of the Los Angeles Aqueduct
Treatment Areas

Google Maps Merritt Cut and North and South Haiwee Reservoirs




Imagery ©2018 Google, Map data ©2018 Google 1 mi

# APPENDIX B

Monitoring Plan

Los Angeles Department of Water and Power
Aquatic Weed Control Permit
Order No. 2013-0002-DWQ
NPDES No. CAG990005

# APAP MONITORING PLAN

## I. SELECTION OF MONITORING SITES

The Monitoring and Reporting Program for Water Quality Order No. 2013-0002-DWQ sets the following sampling frequency:

"Collect samples from a minimum of six application events for each active ingredient in each environmental setting (flowing water and non-flowing water) per year, except for glyphosate. If there are less than six application events in a year, collect samples during each application event for each active ingredient in each environmental setting (flowing water and non-flowing water). If the results from six consecutive sampling events show concentrations that are less than the receiving water limitation/trigger for an active ingredient in an environmental setting, sampling shall be reduced to one application event per year for that active ingredient in that environmental setting. If the yearly sampling event shows exceedance of the receiving water limitation/trigger for an active ingredient in an environmental setting, then sampling shall return to six application events for that active ingredient in each environmental setting. For glyphosate, collect samples from one application event from each environmental setting (flowing water and non-flowing water) per year."

LADWP applies aquatic herbicides and algaecides to the flowing and non-flowing sites as shown in the table below.

| Site Type | Aquatic Herbicide | Application Sites | Estimated No. of Applications/Year |
|---|---|---|---|
| Van Norman Complex | Glyphosate-based Roundup or Roundup Custom | 3 | 1 |
| Lower Franklin Reservoir Facility | Glyphosate-based Roundup or Roundup Custom | 3 | 1 |
| Barren Ridge Renewable Transmission Project | Glyphosate-based Roundup or Roundup Custom, Garlon (triclopyr) | 10-39 (number to be lowered, per Nadia) | 1-2 |
| Castaic Creek | Glyphosate-based Roundup or Roundup Custom | 2 | 1 |
| Big Tujunga and Little Tujunga Canyons | Aquamaster (glyphosate), Habitat (imazapyr), Renovate 3 (triclopyr) | Multiple | 2 |
| Alabama Gates | Copper sulfate | 1 | 1-5 |
| Merritt Cut, North and South Haiwee Reservoirs, and Other Areas of the Los Angeles Aqueduct | Copper sulfate | Multiple | 1-5 |

Samples will be collected once annually at the Van Norman Complex, the Lower Franklin Reservoir Facility, and Castaic Creek, as these sites are only treated once annually with glyphosate-based herbicides. Samples will be collected during every application at the Barren Ridge, Big Tujunga and Little Tujunga Canyons, Alabama Gates, Merritt Cut, North and South Haiwee Reservoirs, and other areas of the Los Angeles Aqueduct as these sites may be treated over once per year and with herbicides/algaecides other than glyphosate.

## II. MONITORING PARAMETERS

The ingredients to be monitored for are glyphosate (the active ingredient in Roundup, Roundup Custom, and Aquamaster), triclopyr (the active ingredient in Garlon and Renovate 3), imazapyr (the active ingredient in Habitat), and copper (the active ingredient in copper sulfate).

Physical, chemical, and visual monitoring parameters are shown in Table 1 and Table 2. Visual observations (Table 2) will be done during all sampling. All laboratory analyses will be conducted by a laboratory certified by the California Department of Public Health to do such analyses. Laboratory results will be reported in the annual report to the appropriate Regional Water Quality Control Board. Records will be maintained for a minimum of three years from the date of sample measurement or report.

**Table 1. Physical and Chemical Monitoring Parameters**

| Constituent/Parameter | Sampling Method | Analytical Method |
|---|---|---|
| 1. Water Temperature (°F) | Grab[1] | See USEPA Guidelines |
| 2. pH (number) | | |
| 3. Turbidity (NTU) | | |
| 4. Electrical Conductivity (µmhos/cm) | | |
| 5. Active ingredient[2] (µg/L) | | |
| 6. Nonylphenol (µg/L)[3] | | |
| 7. Hardness (if copper is monitored) | | |
| 8. Dissolved Oxygen (mg/L) | | |

[1]Samples will be collected at 3 feet below the surface of the water body or at mid-water column depth if the depth is less than 3 feet, as stipulated in Table C-1 Monitoring Requirements of Order No. 2013-0002-DWQ.
[2]Glyphosate, imazapyr, triclopyr, and dissolved copper.
[3]Only required when a surfactant is used.

**Table 2. Visual Monitoring Parameters**

| Parameter | Description |
|---|---|
| 1. Monitoring Area | Forebay, stormwater channel, intake channel, natural stream, pond, lake, etc. |
| 2. Appearance of Waterway | Sheen, color, clarity, etc. |
| 3. Weather conditions | Fog, rain, wind, etc. |

## III. TYPES OF MONITORING REQUIRED

1. Background Monitoring
   Background monitoring samples shall be collected upstream at the time of the application event or in the application area just prior (up to 24 hours in advance of) the application event.

2. Event Monitoring
   Event monitoring samples shall be collected immediately downstream of the treatment area in flowing waters or immediately outside of the treatment area in non-flowing waters. The samples shall be taken immediately after the application event, but after sufficient time has elapsed such that treated water would have exited the treatment area.

3. Post-Event Monitoring
   Post-event samples shall be collected within the treatment area and within one week after the application event.

## IV. MONITORING AT LADWP FACILITIES

1. Van Norman Complex
   *Aquatic Herbicide Applied*: Glyphosate-based Roundup or Roundup Custom for Aquatic and Terrestrial Use.

   *Treatment Areas:* The treatment area is variable and dependent upon the location of invasive species as determined by monitoring. For each application event, a map will be submitted in the annual report to the Regional Water Quality Control Board showing the application area and treatment area.

   *Monitoring:* Refer to Table 3 for monitoring sample types, timing of sample collection, and sample location.

2. Lower Franklin Reservoir Facility
   *Aquatic Herbicide Applied:* Glyphosate-based Roundup or Roundup Custom for Aquatic and Terrestrial Use.

   *Treatment Areas:* The treatment area is variable and dependent upon the location of invasive species as determined by monitoring. For each application event, a map will be submitted in the annual report to the Regional Water Quality Control Board showing the application area and treatment area.

   *Monitoring:* Refer to Table 3 for monitoring sample types, timing of sample collection, and sample location.

3. Barren Ridge Renewable Transmission Project
*Aquatic Herbicide Applied:* Glyphosate-based Roundup or Roundup Custom for Aquatic and Terrestrial Use and triclopyr-based Garlon.

*Treatment Areas:* The treatment area is along the construction path for transmission lines and a switching station. The initial (pre-construction) weed/invasive species treatment is required by the Forest Service. It is unknown if future treatment will be required. If it is, the treatment areas will likely be variable and dependent upon the location of weeds/invasive species as determined by monitoring. For each application event, a map will be submitted in the annual report to the Regional Water Quality Control Board showing the application area and treatment area.

*Monitoring:* Refer to Table 3 for monitoring sample types, timing of sample collection, and sample location.

4. Castaic Creek
*Aquatic Herbicide Applied:* Glyphosate-based Roundup or Roundup Custom for Aquatic and Terrestrial Use.

*Treatment Areas:* The treatment area is the spillway and debris basin. For each application event, a map will be submitted in the annual report to the Regional Water Quality Control Board showing the application area and treatment area.

*Monitoring:* Refer to Table 3 for monitoring sample types, timing of sample collection, and sample location.

5. Big Tujunga and Little Tujunga Canyons
*Aquatic Herbicide Applied:* Glyphosate-based Aquamaster, imazapyr-based Habitat, and triclopyr-based Renovate 3.

*Treatment Areas:* The treatment area consists of approximately 100 acres of the Big Tujunga and Little Tujunga canyons, and riparian corridors. For each application event, a map will be submitted in the annual report to the Regional Water Quality Control Board showing the application area and treatment area.

*Monitoring:* Refer to Table 3 for monitoring sample types, timing of sample collection, and sample location.

6. Alabama Gates
*Algaecide Applied:* Copper sulfate

*Treatment Areas:* The treatment area is at the location of the Alabama Gates at the start of the concrete-lined portion of the Los Angele Aqueduct. For each application event, a map will be submitted in the annual report to the Regional Water Quality Control Board showing the application area and treatment area.

*Monitoring:* Refer to Table 3 for monitoring sample types, timing of sample collection, and sample location.

7. Merritt Cut, North and South Haiwee Reservoirs, and Other Areas of the Los Angeles Aqueduct
*Algaecide Applied:* Copper sulfate

*Treatment Areas:* The treatment area is at the North or South Haiwee Reservoirs, at Merritt Cut located between the Haiwee Reservoirs, or any other possible adjacent areas along the Los Angeles Aqueduct requiring treatment. For each application event, a map will be submitted in the annual report to the Regional Water Quality Control Board showing the application area and treatment area.

*Monitoring:* Refer to Table 3 for monitoring sample types, timing of sample collection, and sample location.

**Table 3. Timing and Location of Monitoring at LADWP Facilities**

| Sample Type | Timing of Sample Collection | Location |
|---|---|---|
| Background | Samples shown in Table 1 and Table 2 will be collected within 24 hours prior to the application event. | Samples shown in Table 1 and Table 2 will be collected within the application area. |
| Event | Samples shown in Table 1 and Table 2 will be collected after the application event. | Samples shown in Table 1 and Table 2 will be collected outside of the treatment area after the application event. |
| Post-event | Samples shown in Table 1 and Table 2 will be collected within 7 days after the application event, or when treatment is deemed complete. | Samples shown in Table 1 and Table 2 will be collected within the treatment area. |